APPENDIX D3

Brochure entitled "RT3310 & RT3410
Radio Data Terminals (Four Sides)
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DOCUMENT 5 - 0360

NORAND®
DATA SYSTEMS

RT3310 & RT3410
Radio Data Terminals

More RF Functionality and Value through Third-Generation NORAND® Technology

The new 3000 Series RF terminals maximize your return on investment. The RT3310 and RT3410 Radio Data Terminals are compatible with all Norand® asynchronous system components. Their third-generation Norand engineering helps ensure a reliable wireless link to your host computer from anywhere in your facilities.

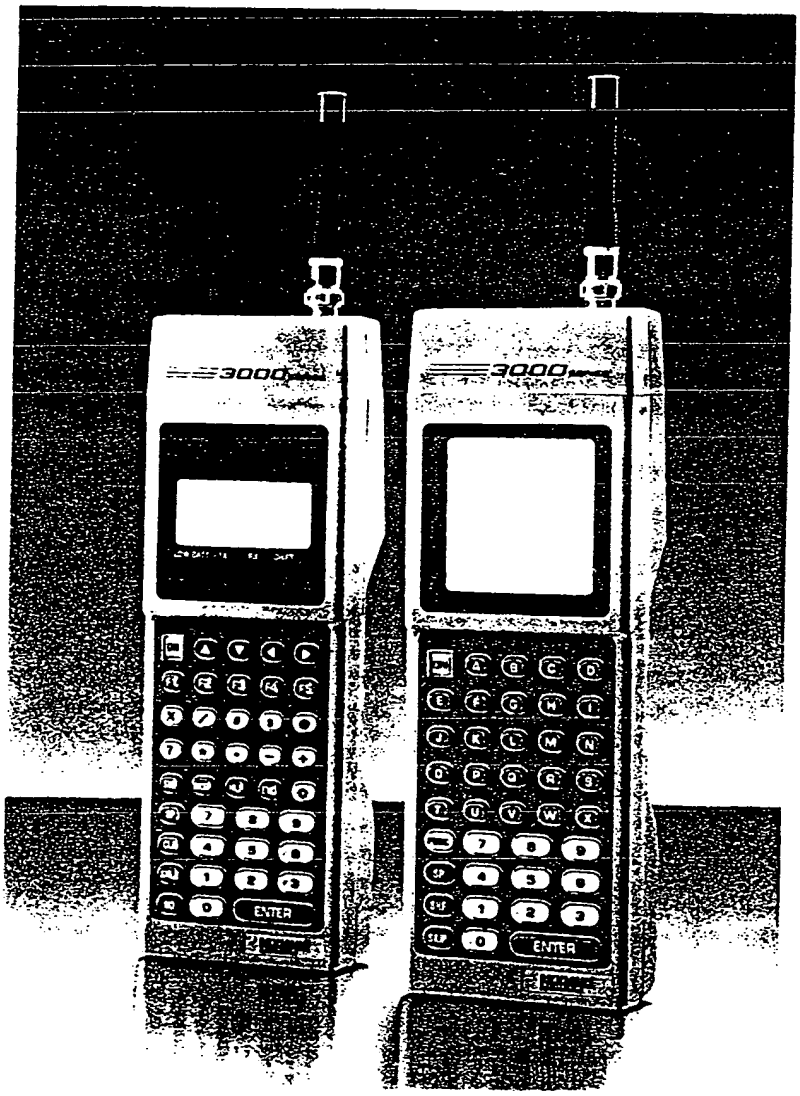
Working together with our new RM3216 multiplexer, they establish a new standard in performance, thanks to their unmatched response time. Employees can spend more time working, less time waiting for the communication of transactions.

These new terminals also set the standard in user comfort and flexibility due to their new ergonomic shape and increased connectivity.

- **The RT3310 and RT3410 Redefine Performance in RF Terminals**

RF extends the boundaries of computerization through reliable two-way radio communication. It gives you immediate access to the information in your host computer from anywhere in your facilities -- and the ability to update that information in seconds.

The RT3310 and RT3410 terminals make RF even better. They give you more functionality... more versatility... and they're easier and more comfortable to use. A product of third-generation Norand technology, they're the best terminals anyone has ever offered.



FEATURES:

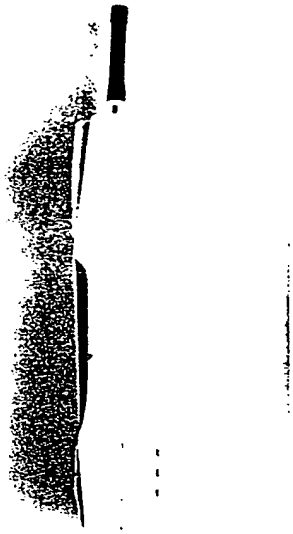
- SureGrip Design™ for comfort
- Exclusive Adaptive Polled Protocol™ for rapid response time
- Exclusive automatic baud-rate switching
- 9- and 15-pin connectors for scanners and printers

• Easier to Hold and Use

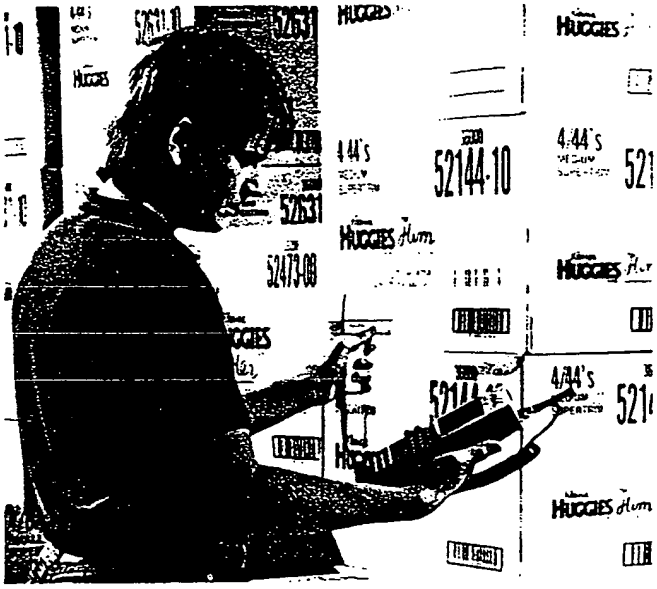
The 3000 Series Terminals feature our SureGrip Design™ for greater handling care. The handsome, contoured shape conforms to the natural position of the hand. A hand strap offers firm, yet gentle support to secure holding the terminal.

Special display features guide users through each step of operation. Your employees merely respond to the prompts that appear on the screen.

Both terminals can be ordered with a standard 39-key color-coded, alphanumeric keyboard or a color-coded retail application keyboard. The retail application keyboard offers five user-definable keys to simplify performing complex functions. They speed the work process by reducing the number of required keystrokes.



The SureGrip Design™ of the 3000 Series Radio Data Terminals contours to the hand of the user for comfort and unconstrained operation.



NORAND® RF provides on-line access of information residing in your host system. On-line access speeds the transactional process and enhances the accuracy of the data collection process.

• Choose a 4- or 16-Line Display

The RT3310 comes with a 4 line by 16 character display. The RT3410 offers a 16 line by 21 character display for detailed applications. The 16 line by 21 character display can also be configured to a 10 line by 16 character display for enhanced user legibility. A display package, that can upgrade your RT3310 to an RT3410 is available through the NORAND® Service Center.

The easy-to-read Super Twist liquid crystal displays (LCD) feature superior readability in varying light conditions. The display also incorporates an electroluminescent backlight for use in low light and nighttime operation.

• More Worker Productivity

Operating in harmony with the NORAND RM3216 multiplexer, the terminals speed work. Our exclusive Enhanced Adaptive Polled Protocol™ reduces response time through faster polling techniques and universal addressing.

Support for the RT3410's 16-line display reduces the time required to communicate data for the display.

• Exclusive Automatic Baud-Rate Switching

Our patented automatic baud-rate switching also improves worker productivity by ensuring the fastest reliable communication of data.

The variable rate capability of the terminal constantly monitors the RF link and transmits at 9,600 b.p.s. when conditions permit, or switches to 4,800 b.p.s. to boost the reliability of transmissions in fringe coverage areas.

Our third-generation digital radio module delivers maximum coverage.

- **Greater Flexibility through Expanded Peripheral Connectivity**

The RT3310 and RT3410 are equipped with 9- and 15-pin D-sub connectors to add to their versatility.

The industry standard 9-pin bar code scanner connector supports a variety of 5-volt scanners such as laser diodes, CCDs, and light pens. These terminals support all major bar code symbologies.

Ensuring pricing accuracy in retail environments is one of the many applications employed with the implementation of the 3000 Series Radio Data Systems.

The 15-pin D-sub connector allows the connection of bar code printers and other automatic identification peripherals.

It allows the connection of the new NP3800 printer for creating bar codes in remote areas. Completely portable with its own power source, the NP3800 will print shelf labels or tag stock wherever it is needed.

- **Reliable Rechargeable Battery Power**

Both terminals are powered by a 7.5 volt DC (nominal) nickel-cadmium battery. The battery pack slides in and out of the terminal easily for fast battery replacement.

A latching mechanism secures the battery in the terminal during operation.

- A Simpler Architecture

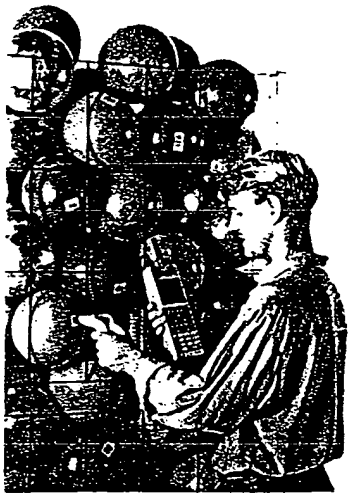
The advantages of the RT3310 and RT3410 lie within their unique system architecture. All software resides in your host computer and can be written in any programming language.

The need for special development systems is eliminated, allowing faster program implementation. A few command code additions to existing software is generally all that is needed to get the system up and running.

This simple approach helps improve the reliability of the terminal because it eliminates unnecessary replacement ROM chips. It also allows easier program updates, changes, and additions. Instead of updating each terminal in your RF network, you merely update the host software.

The RT3310 and RT3410 terminals are part of the advanced 3000 Series RF network systems from Norand. The RM3216 multiplexer handles timing, protocol, and data buffering between the host and the hand-held terminals. And the RB2212 high-performance base radio transceiver facilitates reliable radio communication between the host and the terminals.

A number of other components and accessories complete making the most of RF for you.



The 3000 Series Radio Data System easily integrates into any host computer system. A few command code additions to existing software is generally all that is needed to get the Norand® system up and running in your operation.

RT3310 & RT3410 Radio Data Terminals
SPECIFICATIONS

Product Features:

Transceiver: Incorporates a 2 watt (UHF) frequency modulated (FM) radio transceiver controlled by the microprocessor. Type accepted per FCC Rules & Regulations, Parts 2 & 90, Private Land Mobile Radio Service

RT3310 Display: Liquid crystal display (LCD) 4 line by 16 character with backlighting and 4 annunciators (low battery, shift mode, radio transmitting, radio receiving). A display package, available through the NORAND® Service Center, can upgrade the RT3310 to an RT3410.

RT3410 Display: Super Twist 128 x 128 pixel LCD with configurable 16 line x 21 character and 10 line x 16 character display feature and electroluminescent backlighting. Semi-temperature compensating contrast control and manual contrast adjustment.

Keyboard: Sealed elastomer 39-key standard color-coded alphanumeric or color-coded with retail symbols

Self-Diagnostics: Performed on power-up with built-in user accessible diagnostics

Audio Alert: An audible buzzer is activated under host control

Electrostatic Discharge Protection: Terminals hardened against electrostatic discharge up to 20,000 volts

Shielding: Conforms to FCC Part 15 for Class A computing devices

RS-232 Support: A 15-pin D-sub connector allows connection to a variety of peripherals such as bar code printers or other data collection devices

Scanner Interface: Industry standard 9-pin D-sub connector with 5 volt scanning options

Hand Strap: Elastic strap (on back of terminal) secures terminal firmly in hand to facilitate handling

RAM: 64K bytes x 8 bits, nonvolatile with lithium battery back-up

ROM: 64K bytes x 8 bits

Device Features:

Microprocessor: High performance CMOS (80C552)

Nonvolatile RAM: Provides data protection for the RAM buffer even when the terminal is turned off or the battery pack is removed

Physical Dimensions:

Size: 9.6" x 3.3" x 1.9" (LWD)
(24.38cm x 8.38cm x 4.83cm)

Weight: 33 ounces (.94kg) with battery pack

Environmental Characteristics:

Temperature:

Operating: 20° to 110°F (-6° to 44°C)

Nicad Battery Charging: 41° to 104°F (5° to 40°C)

Storage: -22° to 140°F (-30° to 60°C)

Humidity: 10 to 90% noncondensing

Altitude: To 10,000 feet (3,048 meters) above sea level

Internal Power Source:

Battery Cells: Nickel-cadmium batteries

Voltage: 7.5 VDC (nominal)

Operating Time From Batteries: 8 - 10 hours typical, dependent on customer usage

Battery Pack Characteristics:

Normal Recharge: Recharge cycle complete in 12 hours

Standby Holding Charge: Maintains the batteries at full charge by supplying a trickle charge rate

Low Battery Indicator: Visual annunciator (BAT) indicating low battery is displayed on bottom line of LCD

Battery Pack Charging:

Charging Sources: AC adapter-type single terminal chargers, multi-terminal chargers, and multi-battery pack chargers available

Input Power: 110/220 VAC, 50/60 Hz

Electrical Safety Approvals: UL, CSA

Radio Characteristics:

Radiated Power: 2 watts (maximum)

Frequency Range: 450 to 470 MHz

RF Data Rate: 4800 baud/9600 baud (automatic baud rate switching dependent upon compatible system configuration)

Type Certification:

USA: FCC (Parts 2 & 90)
Canada: DOC (available 1991)

Bar Code Scanning Support:

CCD Bar Code Scanners (5 volt)
Laser Scanners (5 volt)
Light Pens (5 volt)

Electrical Interface: Incorporates a 9-pin male, captive type D-sub connector on top end of the terminals. Interface cable available for connectivity to scanners with NORAND 15-pin D-sub connectors.

Bar Code Symbologies Support: UPC/EAN, UPC/EAN with add-ons, Code 39, Extended Code 39, Encoded Code 39, Code 93, Code 128, Interleaved 2 of 5, Plessey, Codabar, ABC Codabar, Straight 2 of 5, and Computer Identics 2 of 5

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